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Economic and Commercial Analysis of Groundfish in Quebec, 1990

Economic and Commercial Analysis
Report n° 77

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ABSTRACT

We have seen a revival of the American market in the last two years. This upturn, illustrated by an increase in American consumption, is the result of aggregate changes that, in the middle term, may affect the demand for Quebec and Canadian products. Thus, new sources of supply are competing with our products and causing major changes in the consumer habits of Americans. Meanwhile, the Quebec industry must come to grips with a shrinking resource and a very slow recovery of prices. Conditions are particularly difficult for the fixed gear fishing fleet of vessels under 50 feet that, unable to catch their allocated quota, have been operating at a loss for the last two years.

SOMMAIRE EXECUTIF

Depuis maintenant deux ans, on assiste à une reprise sur le marché américain. Cette reprise, illustrée par la hausse de la consommation américaine, découle de changements globaux qui, à moyen terme, risquent d'affecter la demande pour les produits québécois et canadiens. Ainsi, de nouvelles sources d'approvisionnements viennent concurrencer nos produits et entraînent des changements importants dans les habitudes de consommation des américains. Entre temps, l'industrie québécoise doit composer avec une ressource moindre et une très lente remontée des prix. La situation est particulièrement difficile pour les flottes de pêche avec engin fixe de moins de 50 pieds qui, incapables de capturer les quotas qui leurs sont alloués, ont opéré à perte en 1989 et 1990.

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INTRODUCTION

The purpose of this report is to inform those involved in different aspects of the Quebec fishing industry about the commercial situation of groundfish and its economic impact on those whose activities primarily depend on this group of species.

The economic and commercial analysis is largely centered on cod. Two reasons led us to proceed in this way. The first is the importance of this species to the Quebec groundfish fishing industry. Although cod's relative share of total landings of groundfish in Quebec has dropped in recent years, it remains the largest species in this group, with 51% of the total volume.

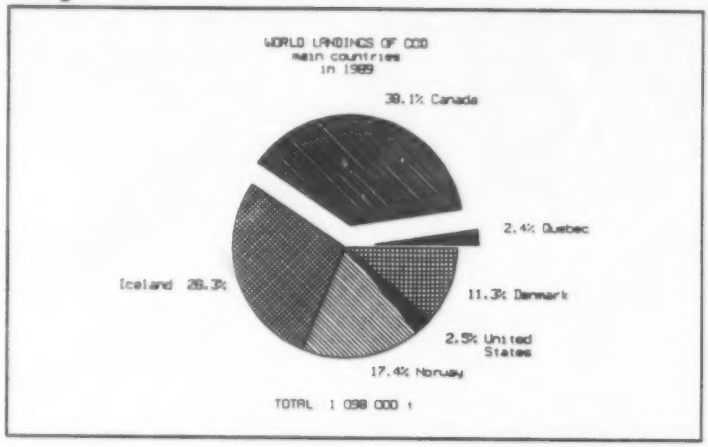
The second reason involves the question of markets. To some extent, cod acts as a yardstick against which are set the prices of other competing species. It therefore becomes possible to identify major market trends on the basis of the changes in the demand for cod. The evolution in cod products on the markets is representative of the evolution in the demand and consequently, enables us to illustrate and explain its impact on the Quebec groundfish industry.

We wish to thank the Commercial Analysis Branch in Ottawa and the Statistics Division in Quebec for their cooperation, which made the preparation of this report possible.

1. SITUATION

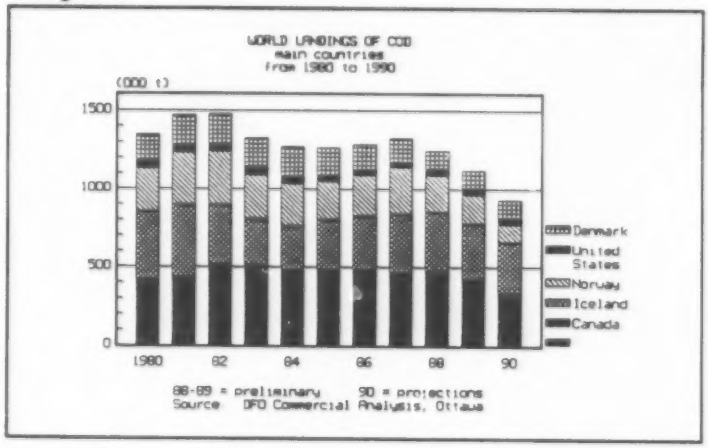
a) World supply of cod

Graph 1



In recent years, landings of Atlantic cod have been close to 19 million m.t. Five countries account for more than 60 to 65 percent of total landings. In 1989 they were, in order of importance, Canada, Iceland, Norway, Denmark and the United States. Of the 1,100,000 m.t. landed by these 5 countries in 1989, little more than 2 percent came from Quebec. Obviously, by itself Quebec has no impact on world markets.

Graph 2

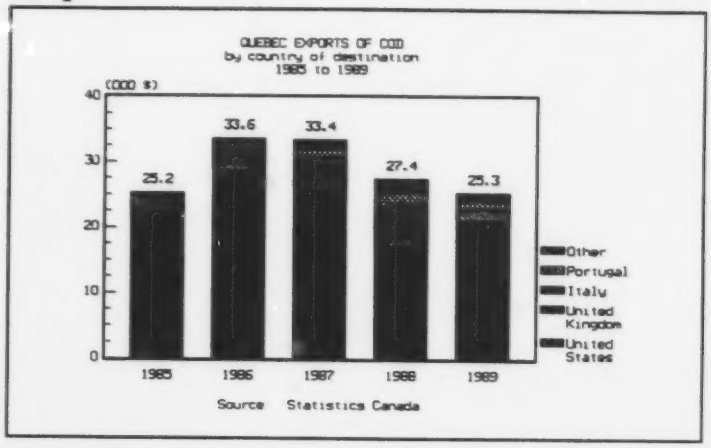


Changes in these countries' landings are important, since they are competing with Quebec and with Canada for the largest market, which is the United States. It should be noted that since 1987, stocks in the main exporting countries are showing obvious signs of overexploitation. The drop over the last three years has been sharp enough to raise the issue of the rarity of certain cod products.

b) Importance of the American market for Quebec

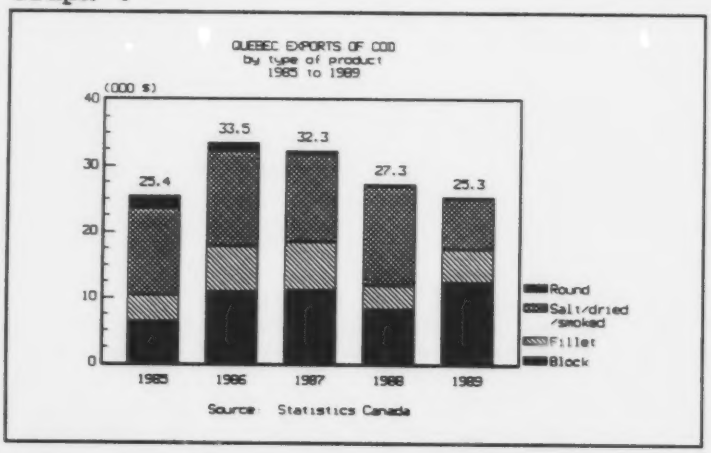
In 1989, the American market took in 85 percent of the groundfish products exported from Quebec. These represent 38 percent of all Quebec exports.

Graph 3



In 1989, Quebec's exports of cod products were valued at $25.4 million, an 8 percent drop from 1988. In terms of value, 83 percent of our exports went to the United States, compared to 58 percent in 1988. Whereas our exports of cod products went to over twenty countries throughout the world in 1988, there were only 11 countries on the list in 1989. Italy, which accounted for 24 percent of the total in 1988, represented less than 7 percent in 1989, but nonetheless remained the second largest destination after the United States.

Graph 4



This change in the relative importance of markets can be explained by the export value of the different cod products. Our exports of frozen cod products went from $10 to $17 million between 1988 and 1989, while exports of salted/dried products fell by $7.4 million. These changes favoured the United States, to the detriment of the southwestern European countries (Italy, Spain, Portugal and Greece) and the West Indies. We can already anticipate that this trend will become more pronounced in 1990.

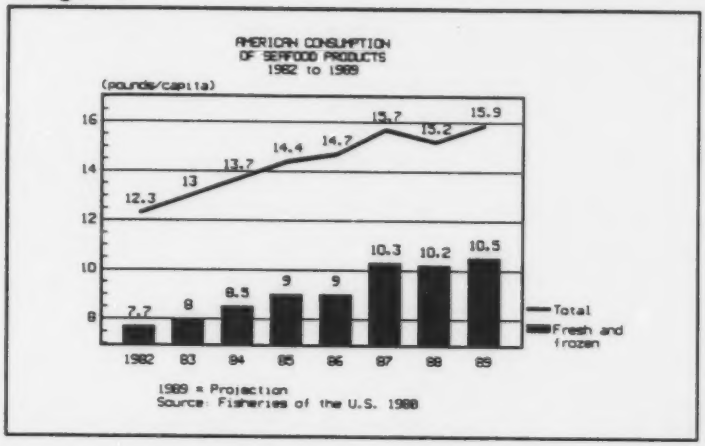
Since all our cod block exports and almost all our exports of fillets are directed to the American market, this is the market in which we will analyze the changes that have occurred during recent years.

2. EVOLUTION IN AMERICAN DEMAND

a) Consumption of seafood products

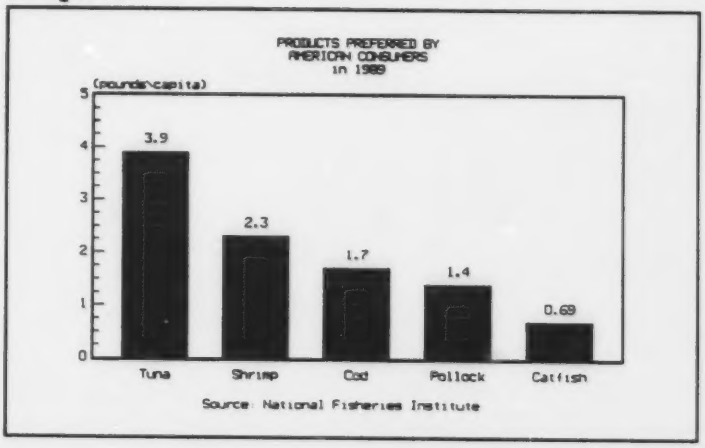
After a break in its growth in 1988, the American consumption of seafood products began to climb again in 1989. The 2.6 percent drop recorded in 1988 was followed by a 6 percent increase in 1989. Increases of 8.5% in the consumption of canned products and of 2.5% in fresh and frozen products explain this revival in American consumption.

Graph 5



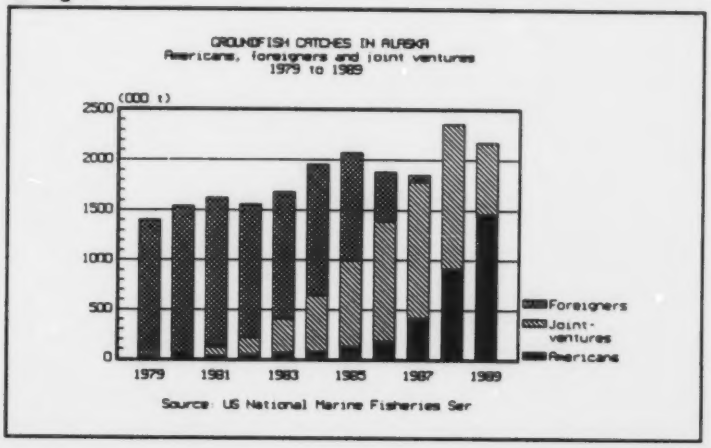
It should be noted that cod is ranks third among fish product in the United States, with a consumption of 1.7 lb/capita in 1989. It is only exceeded by tuna and shrimp. Although there has been no change in the first four rankings between 1988 and 1989, catfish has climbed from seventh place to fifth, displacing flatfish, which are now seventh behind mussels.

Graph 6



b) Changes affecting demand

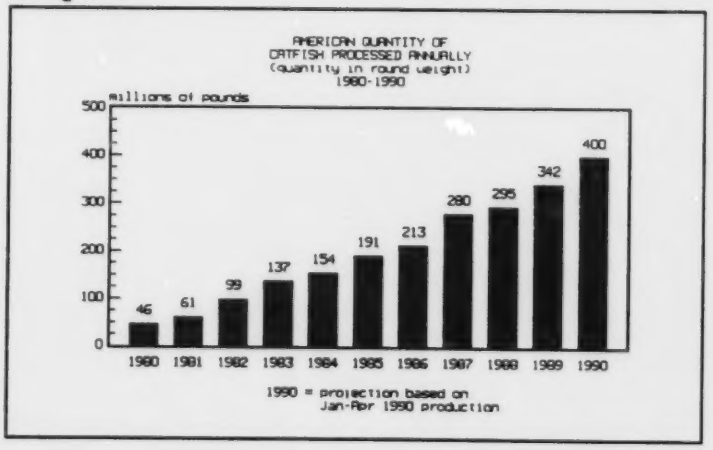
Graph 7



Among the factors that now affect and are likely to continue to affect the American demand for our products, the Americanization of the Alaska fishery should be noted. In recent years, the capacity of the American fleet has increased considerably and it is now able to catch a sizeable share of the available resource. Thus, American landings of pollock have risen from 59,200 t in 1986 to 1,072,000 t in 1989, while Pacific cod catches increased from 47,400 t to 169,000 t.

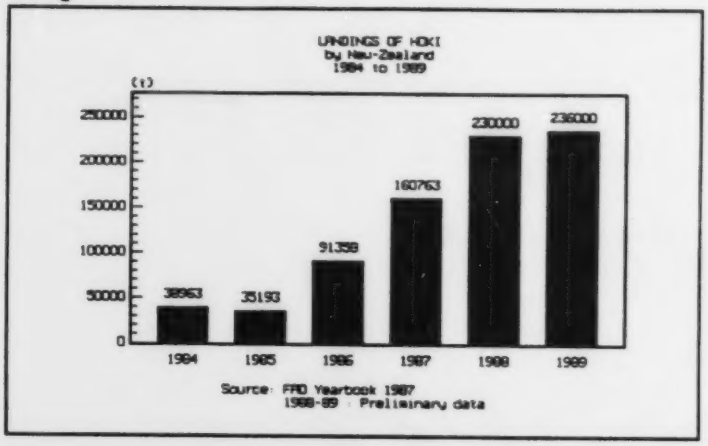
This new supply of raw material is reflected in American eating habits. The consumption of pollock has increased from 0.89 lb/capita in 1987 to 1.4 lb/capita in 1989, a 57% jump over two years. This is also true of Pacific cod, and allows consumption to remain at the same level even though Atlantic cod imports are falling.

Graph 8



Americans are adopting new eating habits more easily. These changes have paved the way for catfish, the production of which has increased tenfold in the last ten years. Now the fifth most important fish in terms of American consumption, catfish has increased by 15% between 1987 and 1989. It is the third biggest product on the U.S. retail market.

Graph 9



Among the new species that are beginning to break into the American market, Hoki from New Zealand is worth noting. It is becoming an important resource, with landings of 236,000 t in 1989. Although the Japanese market is its largest outlet, the American market is increasingly appreciative of this white-fleshed fish. This same area of the world also provides Orange roughy, also enjoyed by American consumers, who purchase 18,000 mt of fillets a year.

In addition, certain species from South America also bear watching. The main ones are Kingklip, Antarctic Queen and Mahimahi. These species seem to be losing ground on the American market in 1990. However, this phenomenon is temporary, and is currently due to the more attractive prices offered on the European market. It may change direction quickly following a rebalancing of markets.

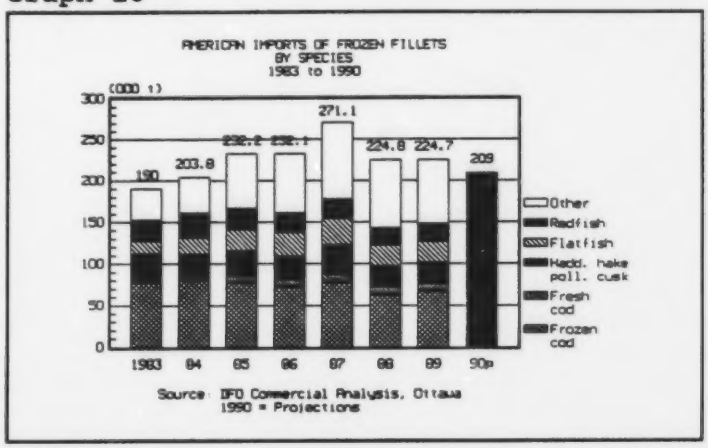
In the aquaculture industry, new species are now under study. Mahimahi is particulary interesting. This species can grow from the egg stage to a 10-12 kg fish in only 12 months. In addition, the food conversion ratio is almost 1 to 1 and fillets represent almost 60% of the round weight, providing a favourable yield for aquaculturists.

3. AMERICAN MARKET FOR COD FILLETS

In the last two years, the cod fillet market has been regaining its momentum. Some nervousness about a too-rapid increase in prices is still noted among buyers. Consequently, it can be said that prices do not really represent the pull of market forces, since they are lower than what they could have been save for the 1987 crisis.

a) American imports

Graph 10



In the last three years, we have seen a drop in American imports of frozen groundfish fillets. The drop in the world supply of the main species is partly responsible for this. Neither should we forget the effect of the Americanization of the fishery off the coast of Alaska. This new source of supply, mainly for pollock and Pacific cod, is replacing traditional imports to some extent.

It should be pointed out that imports involving non-traditional[1] species increased from 17% of the total in 1984 to over 36% in 1989. Hand in hand with this phenomenon, the share of fillet supplies from the Southern Hemisphere increased from 24% in 1984 to 38% in 1989. In 1990, the prices offered on the European market are attracting a large part of these supplies.

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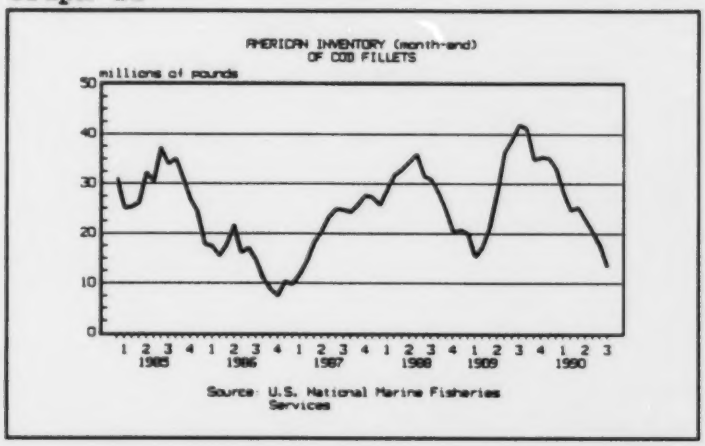
[1] Excluding cod, haddock, pollock, hake, flatfish and redfish.

b) American inventory of cod fillets

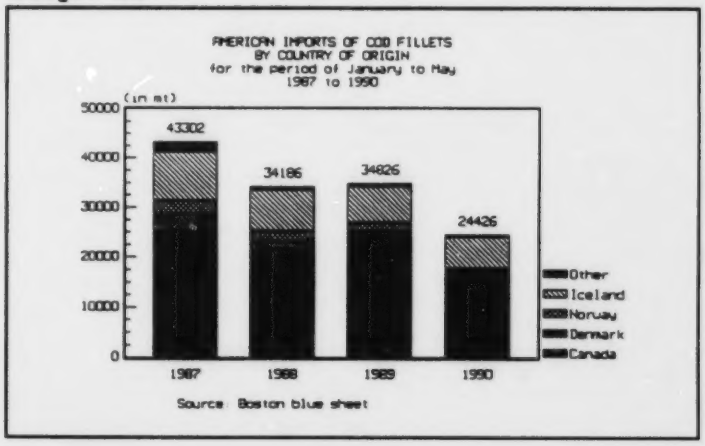
Graph 11


AMERICAN INVENTORY (month-end)
OF COD FILLETS
millions of pounds
50
40
30
20
10
0
1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3
1985 1986 1987 1988 1989 1990
Source: U.S. National Marine Fisheries Services

Since the fall of 1989, American inventories of cod fillets have been dropping. At the end of August of this year, there were only 13.4 million pounds in inventory, which is the lowest level recorded in August in the last 6 years. The lack of supply and strong demand are largely responsible for this situation. Some American market observers estimate that Pacific cod makes up a greater and greater part of American inventory statistics. In other words, the decline in American inventories of Atlantic cod is even sharper than it appears. Pressure is therefore strong for an increase in prices.

c) American imports of cod fillets

Graph 12

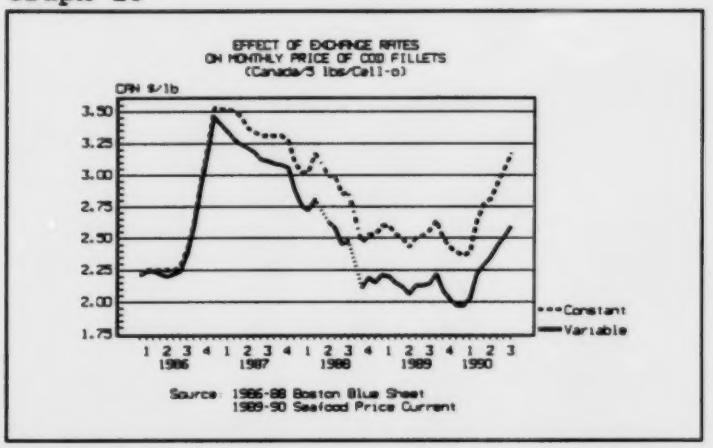


A quick look at the origin of the cod fillets indicates that the Canadian share of American imports wavers between 60% and 70%.

Imports of cod fillets reflect the sharp drop in world landings. In addition, Norway's production in 1990 is mainly going to supply the European market, which partly explains the supply problems of Americans.

d) Price of cod fillets

Graph 13

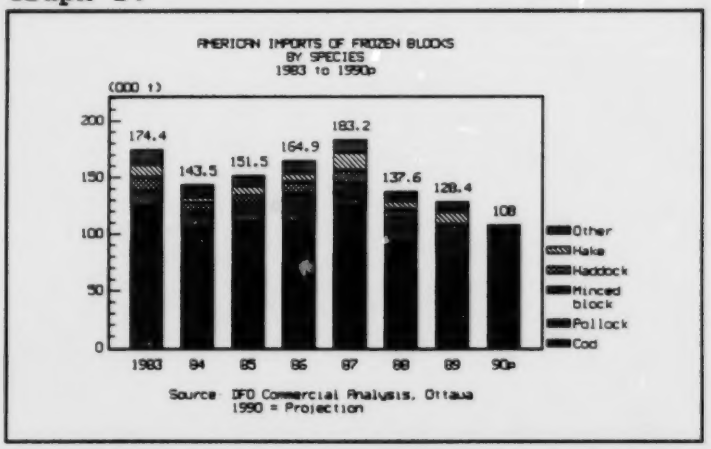


As previously mentioned, pressure is great for an increase in prices. The Canadian 5 lb 1/3 cnt fillet pack reached $2.38 U.S./lb in September 1990, an increase of 32% in one year. However, the strength of the Canadian dollar continues to put our industry at a disadvantage. Thus, compared to the exchange rate in effect in early 1986, our industry is currently losing 20% on every sale to the United States.

4. AMERICAN MARKET FOR COD BLOCKS

a) American imports of blocks

Graph 14



American imports of groundfish blocks have been declining for a fourth consecutive year. In 4 years they have dropped by 41%. Although the phenomenon is less pronounced than for fillets, the presence of alternative sources of supply seems to be becoming more pronounced. The non-traditional species that accounted for 10% of the total American imports of frozen blocks in 1984, made up 20% in 1989. In terms of sources of supply, traditional countries[2] saw their share slip from 73% to 66% between 1984 and 1989.

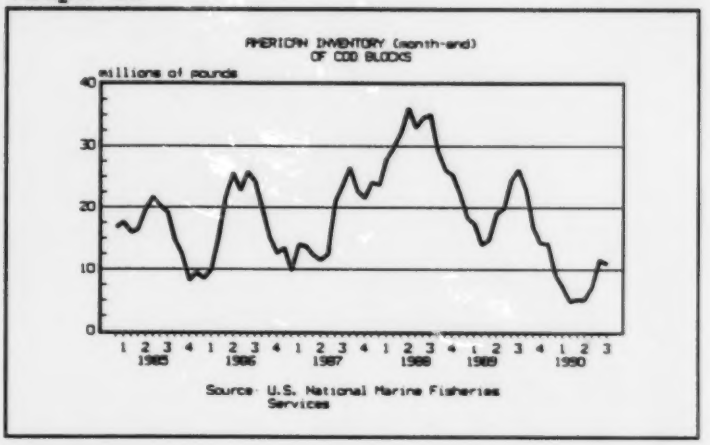
---

[2] Canada, Norway, Iceland and Denmark.

b) American inventory of cod blocks

Graph 15

Despite the rise noted last July, American inventories of cod remain very low. In fact, such low levels had not been recorded since early 1987. With only 11 million pounds in inventory, pressure is great for an increase in prices.

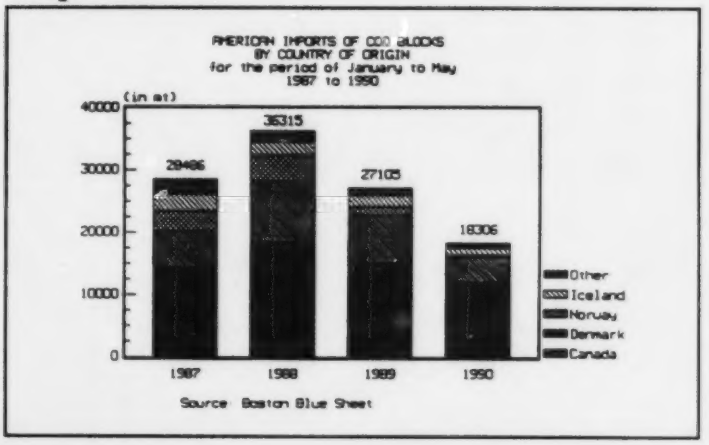

AMERICAN INVENTORY (month-end)
OF COD BLOCKS
millions of pounds
40
30
20
10
0
1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3
1985 1986 1987 1988 1989 1990
Source: U.S. National Marine Fisheries Services

c) American imports of cod blocks

Graph 16

American imports, which have been declining for the last 4 years, reflect the drop in world supply, but also the marked shift of production to fillets.

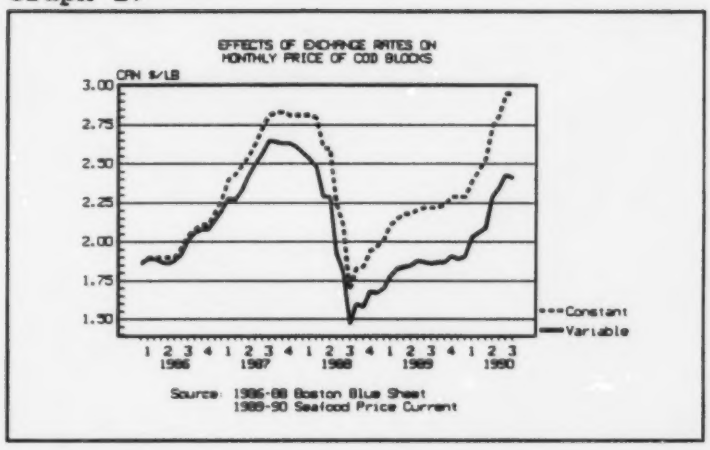
In 1990, Norway stayed away from the American market. Moreover, Denmark is pulling out all the stops to sign trade agreement with certain countries to increase its supply of cod.



In the short term, Canada is taking over a larger share of the American market of frozen cod blocks in a context of declining supplies.

d) Price of cod blocks

Graph 17

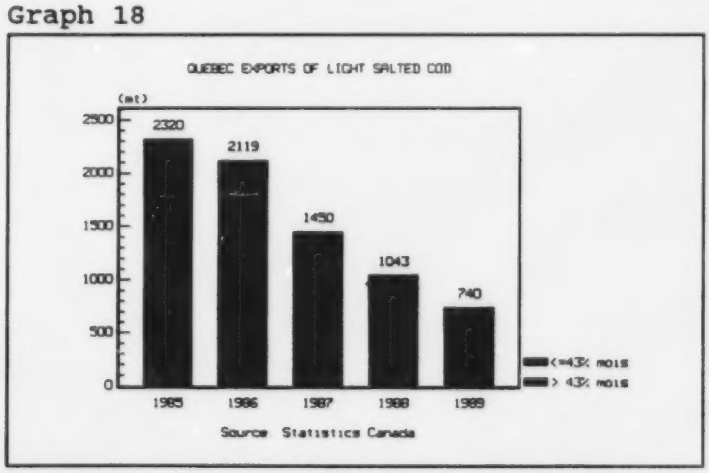


The price of cod blocks has reached new highs since last July, exceeding the record levels of the end of 1987. As with fillets, the exchange rate is against Canadian producers. The price of a block has now reached $2.15 US/lb in Boston, which represents an increase of 36% over last year and of 65% over September 1988.

5. MARKET FOR SALTED/DRIED FISH

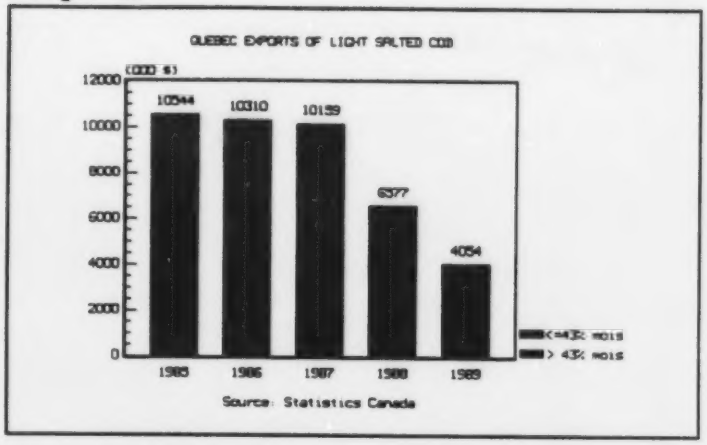
The basic elements of the export markets for Quebec salted/dried products can be defined through the two main products, which are light salted and dried cod with a moisture content of 43 percent or less and light salted and dried cod with a moisture content of more than 43 percent.

Graph 18



The market for salted/dried products is clearly on a downswing. As shown by the graph, the volumes exported have declined continuously over the past 5 years. The tightening of markets is partly responsible for this, but the problems experienced by salt fish plants in obtaining their supply of cod is also a factor. In the Gulf of St. Lawrence, a sizeable reduction in the average size of cod has been noted. This affects the salted/dried fish processing sector directly, as this sector mostly uses the larger sizes of cod.

Graph 19



Until 1988, good conditions on the Italian market enabled the value of our exports of salted/dried fish to remain above the 10 million mark. However, a downward swing began in 1989 and its bottom point is difficult to predict.

So far in 1990, existing data show a sharp drop in our exports and the prices paid on the principal markets are now falling.

6. MARKET FOR OTHER GROUNDFISH

a) Redfish

VARIABLES	FILLET	BLOCK	PERIOD
American Imports	↑ Total 23%	↓ Total 44%	Jan. to May 1990/1989
	↑ Canada 31%	↓ Canada 65%	
American Inventory	↑ 22%	↑ 84%	June 1990 vs June 1989
Price in Boston	↓ * 10%	↓ 6%	August 1990 vs August 1989

*/ Price of 5 lb Cell-O

The world supply increased slightly in recent years, reaching 436,000 t in 1987. The USSR ranks first in terms of landings. However, since its catches are frozen at sea and reserved for domestic consumption, it is not a competitor on the American market.

Fillet

Canada is by far the biggest supplier of fillets on the American market and American imports are increasing in 1990. But the demand is not keeping up, and inventories are rising. The result is a 10% drop in prices.

Blocks

The considerable drop in American imports of frozen blocks, mainly from Canada (lower by 65%) and Iceland, conceals a sharp increase in stocks from Chile. Demand is weak and inventories have risen sharply in 1990. Consequently, the price is now 6% lower in comparison to last year.

b) Flatfish

VARIABLES	FILLET	BLOCK	PERIOD
American Imports	↑ Total 10%	↓ Total 14%	Jan. to May 1990/1989
	↓ Canada 18%	↑ Canada 100%	
American Inventory	↑ 20%	↓ 67%	June 1990 vs June 1989
Price in Boston	↑ * 2%	↓ 2%	August 1990 vs August 1989

*/ Price of 10 lb Layer pack

Fillet

Canada is losing ground on the American flatfish fillet market to Argentina and Chile. Although inventories are 20% higher than last year, the price has remained relatively stable.

Blocks

In the sale of blocks, Canada is on the way to regaining its position are primary supplier of the American market. It had temporarily lost its place to Korea in 1989. This year, Korean exports to the United States have dipped by 50%. Inventories are currently diminishing, but no rising trend in prices is noted. The market for flatfish blocks and fillets is a difficult market to define, given the many species that may be contained in this category. It is therefore impossible to differentiate the price of more specific species in Quebec from the price for all flat fish.

c) Greenland halibut

VARIABLES	FILLET	BLOCK	PERIOD
American Imports	↑ Total 23%	↓ Total 100%	Jan. to May 1990/1989
	↑ Canada 26%	↓ Canada n/a%	
American Inventory	↓ 70%	↓ 79%	June 1990 vs June 1989
Price in Boston	↑ * 58%	↓ 2%	August 1990 vs August 1989

*/ Price of 10 lb Layer pack

Fillet

The market for Greenland halibut fillet is an interesting one at the moment. Despite the 22% increase in American imports, inventories have dropped by 70%, which leads us to suppose that the demand is strong. Consequently, the price of a 10 lb pack of fillets has risen by 58%. The production of 5 lb packs seems to have been abandoned, since the quantities of 5 lb Cell-O packs traded since June are insuffucient to provide price quotations.

Blocks

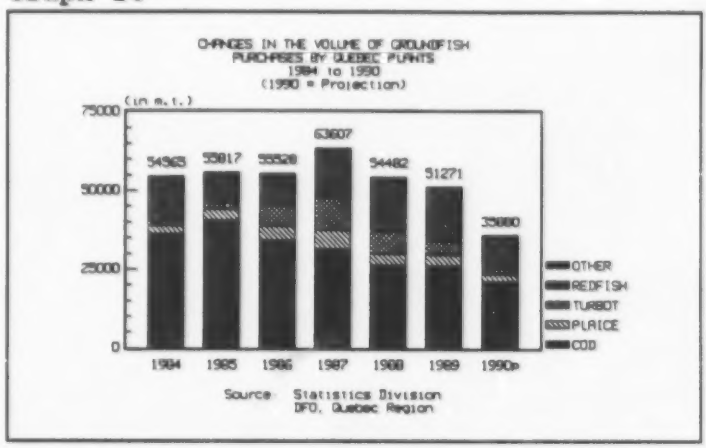
The United States have practically not imported any halibut blocks during the first half of 1990. However, indications are that the demand is steady, since the price has remained relatively stable despite the sharp drop in inventories.

7. CONDITIONS IN THE PROCESSING SECTOR

a) Supply of groundfish to plants

Since 1987, when the stock in the plants reached almost 64,000 mt, the plants have been deeply affected by the decline in landings. Preliminary data for 1990 confirm the downward trend. The decline in groundfish supply to the plants is estimated at 44% over three years.

Graph 20



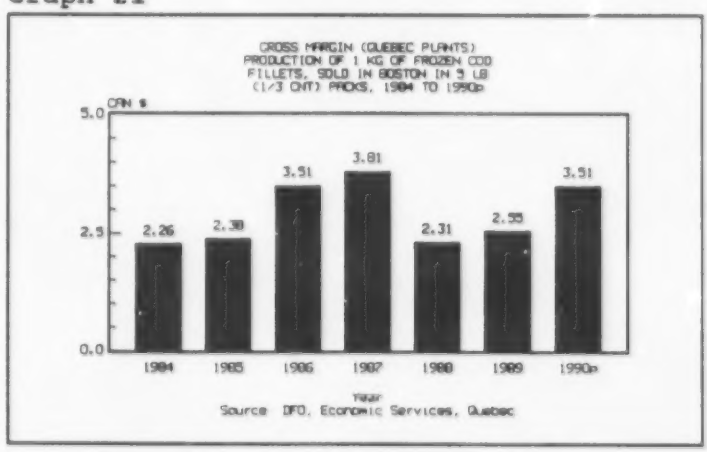
b) Gross margin

The gross margin is the difference between the price of a given quantity of a product on the market and the cost of the raw materials used in its manufacture. It therefore represents what is left to the processor, per unit produced, to pay all production costs, once the cost of the raw material has been deducted.

- Cod fillet

The gross margin from the production of a kilogram of cod fillets sold in Boston in 5 lb packs (1/3 cnt) is partly regaining the ground it has lost in 1988. It is now at the same level as in 1986. However, this index does not take into account the considerable decline in landings between 1986 and 1990, as well as the increase in production costs.

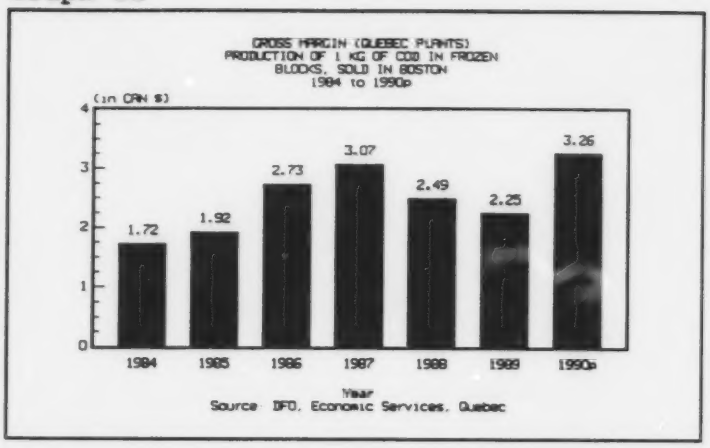
Graph 21



- Cod blocks

Changes in the gross margin of the production of a 1-kg cod block sold in Boston are similar to those for cod fillets, except that at its current price of $3.26, it is above the level of $3.07 reached in 1987.

Graph 22



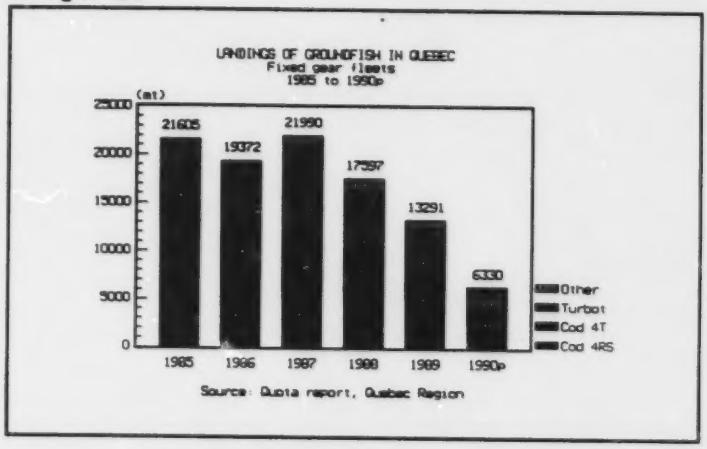
8. IMPACT ON THE CATCH SECTOR

After having been harshly affected by the decline in American demand in 1988, groundfish fishing fleets must now come to terms with a less abundant resource. The impact is particularly felt by fixed gear fishing fleets, which are unable to catch the quotas allocated to them.

a) Fixed gear fleets

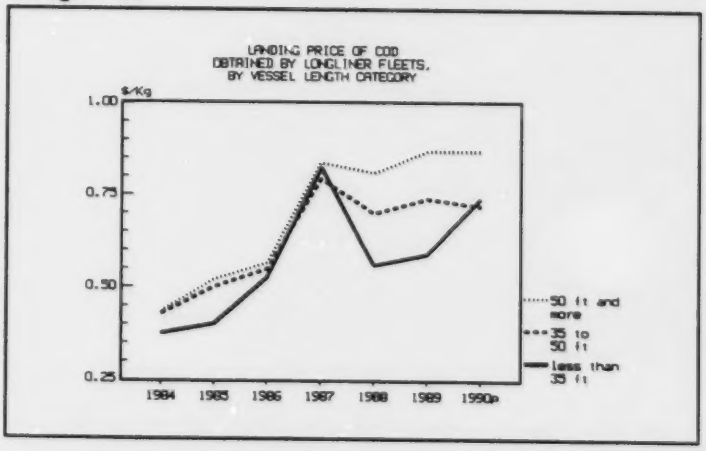
Since 1987, landings of groundfish by fixed gear fishing fleets have plummeted by over 70%. Turbot is only a shadow of what it was in 1987, while Gulf cod stocks provide much lower yields than in past years to fixed gear enterprises.

Graph 23



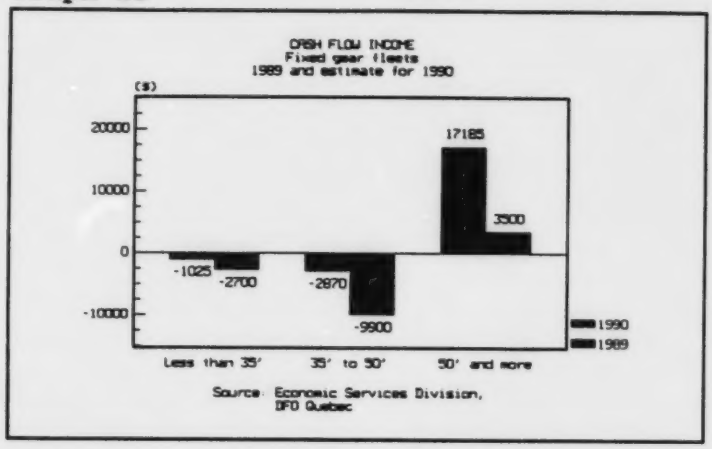
An analysis of the price paid for cod to the various length categories of fishing vessels with fixed gear indicates that there is still a price difference between cod caught by longliners and cod from gillnets. However, it is noted that the price paid to vessels under 35 feet has caught up to the prices to vessels of 35 to 50 feet. Increased competition by the plants for the raw material, and a sharp decline in the landings by longliners under 50 feet may explain this catch-up.

Graph 24



Graph 25

All fixed gear fleets are deeply affected by the decline in the resource. While the fleet of vessels under 50 feet has not covered its operating costs for the last two years, the profitability of the vessels of 50 feet and more is now in jeopardy. The situation is all the more disastrous since it greatly affects the communities that depend on the fishery.

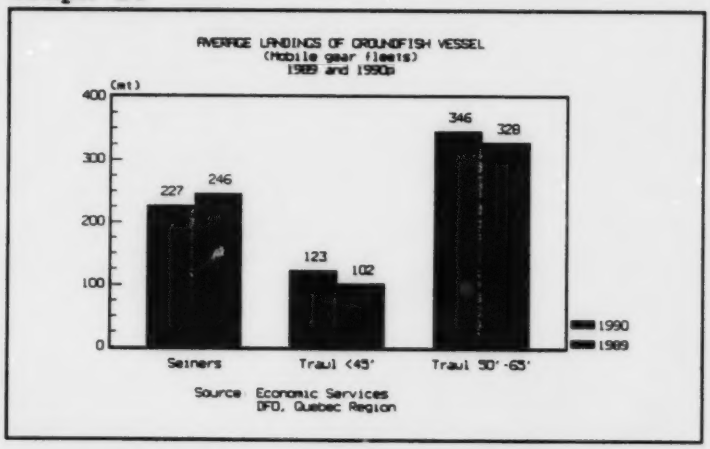


b) Mobile gear fleets

We will review three mobile gear fleets: the Scottish seiner fleet from the Magdalen Islands, the trawlers under 45 feet and the fleet of 50 to 65-feet vessels under enterprise allocation.

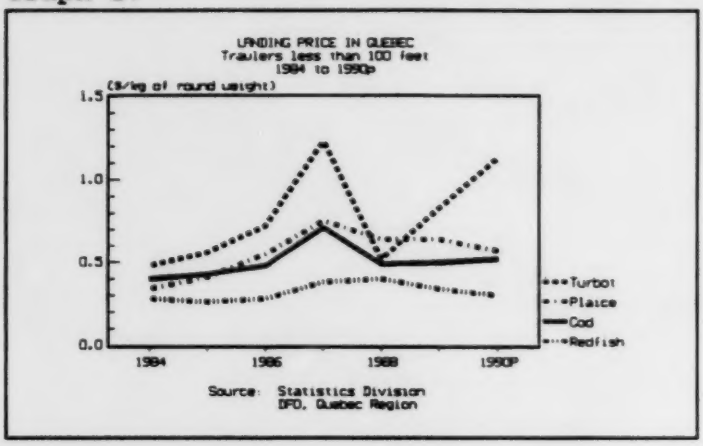
Graph 26

Contrary to the fixed gear fleets, the volume of landings by mobile gear fleets did not show any marked reduction in 1990. While the Scottish seiners are having a good year, trawler fleets are experiencing a slight decline in landings.



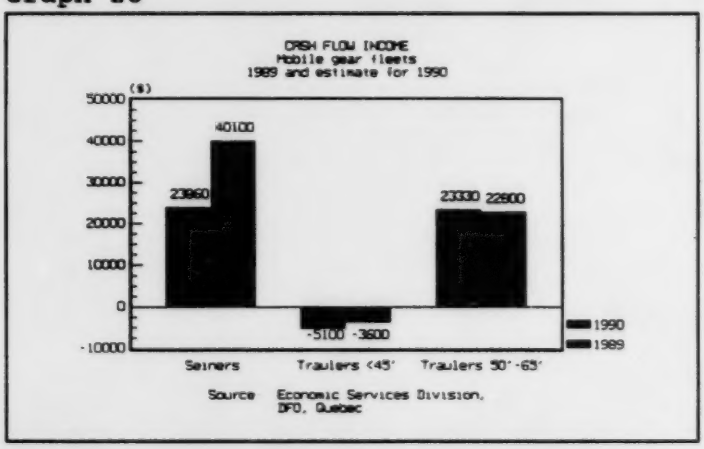
In 1990, mobile gear fishing fleets have benefitted from a slight increase in the price of cod, while the prices of American plaice and redfish have fallen slightly. These prices quite faithfully reflect the conditions encountered on the markets.

Graph 27



The Magdalen Islands Scottish seiner fleet will clearly improve its profitability in 1990. This improvement is due to the increase in landings of cod and plaice. Trawlers under 45 feet will show less loss than last year. Conditions for this fleet should be carefully examined, so as to find solutions for its problems. Lastly, the fleet of trawlers under enterprise allocation is maintaining its performance in relation to last year. It is expected that it will benefit, in coming years, from the rationalization which should follow the management mesures it has been subject to, the main one being the enterprise allocation program implemented in 1989.

Graph 28



APPENDIX A

STATISTICAL TABLES

Table 1

World landings of Atlantic cod by selected countries 1977-1990

(thousands of tonnes, live weight)

Year	Canada	Denmark	Iceland	Norway	U.S.	Total
1977	235.4	153.5	329.7	426.5	34.3	1,179.4
1978	296.4	133.0	319.7	403.9	39.2	1,192.2
1979	370.2	136.6	360.1	334.3	44.4	1,245.6
1980	418.0	164.4	429.1	281.2	53.6	1,346.3
1981	432.6	194.6	460.6	338.9	45.6	1,472.3
1982	510.7	193.1	382.3	344.4	47.4	1,477.9
1983	509.0	185.6	293.9	284.0	51.0	1,323.5
1984	474.9	182.7	281.5	276.4	43.9	1,259.4
1985	480.5	163.9	322.8	247.8	37.6	1,252.6
1986	474.7	145.8	365.9	269.5	27.7	1,283.6
1987	457.4	143.7	389.6	304.0	26.8	1,321.5
1988(prelim.)	471.1	121.4	375.8	256.6	34.5	1,259.4
1989(prelim.)	422.0	120.0	353.0	187.0	35.6	1,117.6
1990(proj.)	330.0	120.0	325.0	120.0	36.0	931.0

Sources: FAO Yearbooks for the years 1977-86
Canada - Department of Fisheries and Oceans
Denmark, Norway and Iceland - National Governments
U.S. - FAO and American Department of Trade

Table 2

Quebec exports of cod products
by country of destination
1985 to 1989

(in thousands of Canadian dollars)

Year	United States	Portugal	United Kingdom	Italy	Other	Total
1985	20,899.1	0.0	1,187.1	2,475.5	628.6	25,190.3
1986	28,381.3	892.8	191.7	3,581.6	499.2	33,546.6
1987	24,874.9	1,230.0	660.1	5,111.4	1,547.1	33,423.5
1988	15,815.8	1,732.0	1,183.1	6,481.2	2,227.9	27,440.0
1989	21,092.6	1,121.4	80.6	1,768.2	1,302.8	25,365.6

Sources: Statistics Canada

Table 3

Quebec exports of cod products
by type of product
1985 to 1989

(in thousands of Canadian dollars)

Year	Round	Fresh fillets	Frozen fillets	Frozen blocks	Salted/ dried	Total
1985	2,071.3	1,090.3	2,865.4	6,335.7	12,954.1	25,316.8
1986	1,435.8	3,070.8	3,893.8	10,835.3	14,295.3	33,531.0
1987	618.9	2,357.8	4,982.0	11,055.3	13,221.5	32,235.5
1988	328.4	1,799.5	1,944.1	8,209.5	15,082.5	27,364.0
1989	340.4	363.6	4,748.9	12,267.8	7,645.0	25,365.7

Sources: Statistics Canada

Table 4

American consumption of seafood products
1982 to 1989

(in lb per capita)

Year	Population (millions)	Consumption			
		Fresh and frozen	Canned	Salted/ dried	Total
1982	229.9	7.7	4.3	0.3	12.3
1983	232.0	8.0	4.8	0.3	13.1
1984	234.8	8.5	4.9	0.3	13.7
1985	237.0	9.0	5.1	0.3	14.4
1986	239.4	9.0	5.4	0.3	14.7
1987	241.5	10.3	5.1	0.3	15.7
1988	243.7	10.2	4.7	0.3	15.2
1989	246.6	10.5	5.1	0.3	15.9

Sources: Fisheries in the United States 1988
Seafood Trend, May 14, 1990

Table 5

Consumption of the most popular species in the United States

1987-89

(in lb per capita)

Species	1987	1988	1989
Tuna	3.500	3.600	3.900
Shrimp	2.300	2.400	2.300
Cod	1.680	1.710	1.700
Pollock	0.890	1.180	1.400
Catfish	0.600	0.600	0.690
Mussels	0.662	0.612	0.610
Flatfish	0.727	0.619	0.570
Salmon	0.428	0.443	0.470
Scallops	0.322	0.314	0.330
Crab	0.323	0.327	0.290
Oysters	0.302	0.312	0.270
Total	11.730	12.120	12.530
Total consumption in the United States	15.700	15.200	15.900
The 11 main products as a % of total consumption in the United States	74.7%	79.7%	78.8%

Source: U.S. National Fisheries Institute

Table 6

Groundfish catches in Alaska
1979 to 1989

(in metric tonnes)

Year	American catches	Joint ventures	Foreign enterprises	Total
1979	5,878	1,469	1,392,321	1,399,668
1980	10,170	34,495	1,495,055	1,539,720
1981	18,903	95,501	1,505,439	1,619,843
1982	33,265	182,798	1,339,935	1,555,998
1983	55,541	353,027	1,271,305	1,679,873
1984	63,157	577,167	1,314,942	1,955,266
1985	114,658	883,567	1,074,409	2,072,634
1986	167,346	1,221,735	490,728	1,879,809
1987	408,724	1,374,231	68,170	1,851,125
1988	907,000	1,452,000	0	2,359,000
1989(prelim.)	1,452,000	726,000	0	2,178,000

Source: U.S. National Marine Fisheries Services

Table 7

American monthly inventory
Cod blocks and fillets
January 1985 to August 1990

(in millions of pounds)

Month	1985	1986	1987	1988	1989	1990
Cod blocks						
January	16.8	8.5	9.8	23.7	18.0	9.2
February	17.6	10.0	14.0	27.9	15.6	7.3
March	16.0	15.3	13.8	29.8	14.0	4.9
April	16.5	21.8	12.3	32.3	14.8	5.2
May	19.7	25.6	11.5	36.1	19.1	5.2
June	21.7	22.8	12.5	33.0	19.9	7.3
July	20.2	25.8	21.0	34.6	24.5	11.6
August	19.2	24.2	23.7	35.1	26.2	11.0
September	14.7	19.7	26.5	29.2	22.9	
October	12.5	15.2	22.8	26.2	16.7	
November	8.2	12.6	21.6	25.3	14.3	
December	9.5	13.5	24.1	22.3	14.2	
Cod fillets						
January	31.0	17.8	9.8	25.7	20.0	33.1
February	25.1	17.4	11.8	29.0	15.3	28.4
March	25.3	15.5	14.3	31.8	17.1	24.7
April	26.2	17.6	18.2	32.9	21.4	25.3
May	32.2	21.6	20.4	34.4	28.3	22.8
June	30.4	16.1	23.3	36.0	36.3	20.3
July	37.2	17.0	24.9	31.5	38.9	17.6
August	33.9	14.6	24.7	30.8	41.9	13.4
September	35.0	10.9	24.3	28.2	41.1	
October	31.3	8.8	25.8	24.5	34.8	
November	26.9	7.4	27.7	20.3	35.3	
December	24.2	10.3	27.2	20.6	35.2	

Source: DFO - Economic and Commercial Analysis, Ottawa

Table 8

American imports of fillets
by country of origin
1983 to 1989

(in thousands of tonnes)

Country	1983	1984	1985	1986	1987	1988	1989
Canada	86.90	97.80	93.70	95.50	101.87	92.27	97.51
Iceland	41.00	42.20	43.10	37.40	39.97	27.76	31.42
Norway	5.30	5.10	5.30	3.30	5.94	4.47	3.79
Denmark	14.20	10.30	13.60	10.00	10.99	6.97	5.50
Other	42.60	48.40	76.50	86.00	112.33	93.29	86.44
Total	190.00	203.80	232.20	232.20	271.10	224.76	224.66

Source: Economic and Commercial Analysis
DFO - Ottawa

Table 9

American imports of fillets
by species
1983 to 1989

(in thousands of tonnes)

Species	1983	1984	1985	1986	1987	1988	1989
Cod	83.10	86.20	84.80	81.60	87.50	72.21	76.25
Haddock[1]	28.00	24.50	29.80	26.30	33.80	23.65	23.83
Flat fish	16.20	20.70	26.30	29.70	33.10	26.56	26.51
Turbot	6.70	7.60	9.70	4.70	7.90	4.03	3.48
Redfish	24.10	28.60	24.10	22.20	21.80	19.00	20.13
Atlantic halibut	0.90	0.40	0.40	0.20	0.40	0.18	0.13
Other[2]	31.00	35.80	57.10	67.40	86.60	79.13	74.33
Total	190.00	203.80	232.20	232.10	271.10	224.76	224.66

1/ Also includes pollock, hake and cusk

2/ Also includes "Orange roughy",
various species of the redfish family, etc.

Source: Economic and Commercial Analysis
DFO - Ottawa

Table 10

American imports of cod fillets
by country of origin
1984 to 1989

(in thousands of tonnes)

Country	1983	1984	1985	1986	1987	1988	1989
Fresh cod							
Canada	5.20	6.80	8.00	9.20	9.00	9.37	8.99
Other	0.20	0.20	0.40	0.20	0.20	0.06	0.12
Total	5.40	7.00	8.40	9.40	9.20	9.43	9.11
Frozen cod							
Canada	42.00	46.90	41.40	40.50	41.10	37.41	42.02
Iceland	19.30	20.10	22.20	22.00	23.10	18.30	19.66
Denmark	9.50	5.40	5.70	3.80	4.80	2.85	2.01
Norway	3.50	3.50	3.80	2.30	4.20	2.75	2.26
Other	3.40	3.30	3.30	3.60	5.10	1.47	1.19
Total	77.70	79.20	76.40	72.20	78.30	62.78	67.14
Grand total	83.10	86.20	84.80	81.60	87.50	72.21	76.25

Sources: Economic and Commercial Analysis
DFO - Ottawa

Table 11

American imports of cod fillets
by country of origin
January to June 1986 to 1990

(in thousands of pounds)

Country	1986	1987	1988	1989	1990
Canada	62,427	65,816	56,438	64,683	42,458
Denmark	5,513	7,499	3,344	2,756	1,339
Norway	3,663	6,960	5,077	4,101	1,107
Iceland	24,834	23,382	22,090	19,731	17,814
Other	4,104	5,854	1,721	1,764	956
Total	100,541	109,511	88,670	93,035	63,674

Source: Boston Blue Sheet
Economic and Commercial Analysis, DFO Ottawa

Table 12

Monthly price of cod fillets (5 lb 1/3 count) January 1986 to September 1990

(in Canadian dollars)

Month	1986	1987	1988	1989	1990
In current dollars					
January	2.21	3.40	2.76	2.21	1.97
February	2.24	3.34	2.72	2.20	2.03
March	2.24	3.28	2.81	2.15	2.22
April	2.22	3.24	n.a.	2.12	2.29
May	2.20	3.21	2.63	2.12	2.35
June	2.22	3.18	2.58	2.13	2.44
July	2.24	3.12	2.45	2.13	2.51
August	2.37	3.11	2.48	2.14	2.59
September	2.58	3.09	n.a.	2.22	2.80
October	2.90	3.08	2.11	2.20	
November	3.16	3.06	2.19	2.23	
December	3.46	2.88	2.15	2.17	
In constant dollars (January 86)[1]					
January	2.21	3.52	3.02	2.60	2.36
February	2.25	3.52	3.02	2.60	2.39
March	2.25	3.50	3.17	2.53	2.64
April	2.25	3.46	n.a.	2.50	2.77
May	2.25	3.37	2.99	2.50	2.81
June	2.25	3.34	2.99	2.50	2.93
July	2.28	3.31	2.85	2.52	3.05
August	2.41	3.31	2.86	2.56	3.17
September	2.61	3.31	n.a.	2.64	3.35
October	2.94	3.31	2.46	2.64	
November	3.21	3.27	2.53	2.68	
December	3.53	3.10	2.53	2.63	

[1]/ Compilation, Economic Services Division
DFO - Quebec Region
(Exchange rate January 1986 = $0.7109 US)

n.a. = not available

Source: Boston Blue Sheet (1986 to 1988)
Seafood Price Current (1989 and 1990)

Table 13

American imports of blocks
by country of origin
1984 to 1989

(in thousands of tonnes)

Country	1983	1984	1985	1986	1987	1988	1989
Canada	56.20	45.60	47.70	56.40	59.00	57.22	55.14
Iceland	27.40	21.60	25.20	19.20	12.12	9.39	9.91
Norway	12.00	8.80	4.70	10.00	12.36	9.06	2.67
Denmark	24.20	28.80	24.00	21.50	28.05	19.69	16.69
Poland	0.70	0.70	8.20	8.50	12.88	5.80	6.46
Japan	4.90	3.70	6.00	10.90	4.33	2.39	5.36
Korea	25.90	23.10	22.30	22.50	32.81	23.29	13.81
Other	23.10	11.20	13.40	15.90	21.67	10.72	18.33
Total	174.40	203.98	229.81	218.20	240.14	178.08	128.37

Source: Economic and Commercial Analysis
DFO - Ottawa

Table 14

American imports of blocks by species 1984 to 1989

(in thousands of tonnes)

Species	1983	1984	1985	1986	1987	1988	1989
Cod	89.80	75.30	74.60	78.30	85.30	68.14	61.51
Haddock	12.60	8.60	7.40	11.10	12.40	8.10	5.78
Flatfish	3.90	4.60	3.80	2.90	4.10	3.31	2.95
Turbot	1.40	1.70	1.30	0.80	1.00	0.34	0.31
Pollock	36.10	31.50	36.00	31.60	40.50	27.90	20.76
Hake	11.10	5.40	8.60	7.30	14.90	7.56	11.00
Redfish	2.70	1.70	0.60	0.80	1.30	0.61	0.46
Minced fish	11.40	11.70	15.40	25.00	18.10	17.29	19.88
Other	5.40	3.00	3.80	7.10	5.60	4.31	5.72
Total	174.40	143.50	151.50	164.90	183.20	137.56	128.37

1/ Also includes western Pacific cod

Source: Economic and Commercial Analysis
DFO - Ottawa

Table 15

American imports of cod blocks by country of origin 1983 to 1989

(in thousands of tonnes)

Country	1983	1984	1985	1986	1987	1988	1989
Canada	42.70	31.70	33.40	40.60	42.90	41.48	38.98
Iceland	10.80	10.20	15.70	12.70	6.30	5.59	5.31
Norway	6.10	5.30	2.10	6.30	7.30	5.15	1.41
Denmark[1]	18.10	21.40	19.30	13.90	21.70	13.28	13.37
Poland	0.40	0.70	0.60	0.30	0.00	0.07	0.04
Japan	0.90	0.40	0.20	0.10	0.10	0.03	0.05
Korea	3.00	2.30	1.40	2.90	5.00	1.82	1.06
Other	7.80	3.30	1.90	1.50	2.00	0.72	1.29
Total	89.80	75.30	74.60	78.30	85.30	68.14	61.51

[1]/ Includes the Faroe Islands

Source: Economic and Commercial Analysis
DFO - Ottawa

Table 16

American imports of cod blocks
by country of origin
January to June 1986 to 1990

(in thousands of pounds)

Country	1986	1987	1988	1989	1990
Canada	50,305	40,457	46,903	41,469	34,351
Denmark	24,830	30,856	28,153	21,341	12,570
Iceland	17,518	6,508	5,765	5,004	3,160
Norway	8,730	9,409	9,389	3,064	92
Rep. of Korea	4,136	5,499	3,220	2,050	361
Other	3,475	2,081	1,140	2,138	4,886
Total	108,994	94,810	94,570	75,066	55,420

Sources: Boston Blue Sheet
Economic and Commercial Analysis, DFO Ottawa

Table 17

Monthly price of cod blocks January 1986 to September 1990

(in Canadian dollars)

Month	1986	1987	1988	1989	1990
In current dollars					
January	1.87	2.20	2.57	1.70	1.91
February	1.89	2.28	2.53	1.78	2.03
March	1.89	2.27	2.48	1.83	2.06
April	1.87	2.33	2.29	1.84	2.09
May	1.86	2.43	2.29	1.85	2.29
June	1.88	2.50	1.93	1.88	2.35
July	1.92	2.57	1.81	1.87	2.43
August	2.01	2.65	1.47	1.85	2.41
September	2.06	2.64	1.60	1.86	2.53
October	2.08	2.63	1.58	1.87	
November	2.08	2.63	1.68	1.90	
December	2.14	2.61	1.67	1.89	
In constant dollars (January 86)[1]					
January	1.87	2.27	2.81	2.01	2.29
February	1.90	2.40	2.81	2.11	2.28
March	1.90	2.43	2.79	2.15	2.29
April	1.90	2.49	2.60	2.18	2.39
May	1.90	2.55	2.60	2.18	2.46
June	1.90	2.63	2.24	2.21	2.53
July	1.96	2.73	2.11	2.22	2.74
August	2.04	2.81	1.69	2.22	2.81
September	2.08	2.83	1.83	2.22	3.07
October	2.11	2.83	1.84	2.24	
November	2.11	2.81	1.94	2.29	
December	2.19	2.81	1.97	2.29	

[1]/ Compilation, Economic Services Division
DFO - Quebec Region
(Exchange rate January 1986 = $0,7091 US)

Source: Boston Blue Sheet (1986 to 1988)
Seafood Price Current (1989 and 1990)

Table 18

Quebec exports of light salted cod with a moisture content or more than 43% 1985 to 1989

Country	1985	1986	1987	1988	1989
Value of exports (in thousands of dollars)					
United States	7,149	7,038	5,265	2,670	2,349
Italy	789	1,068	1,432	616	466
Other	0	289	0	187	39
Total	7,938	8,395	6,697	3,473	2,854
Volume of exports (in metric tonnes)					
United States	1,586	1,461	888	541	474
Italy	166	210	166	73	57
Other	1	106	0	35	14
Total	1,753	1,777	1,054	649	545

Sources: Statistics Canada

Table 18 (continued)

Quebec exports of light salted cod with a moisture content of 43% or less 1985 to 1989

Country	1985	1986	1987	1988	1989
Value of exports (in thousands of dollars)					
United States	1,070	81	186	300	106
Italy	1,535	1,834	3,066	2,725	920
Other	1	0	210	79	175
Total	2,606	1,915	3,462	3,104	1,201
Volume of exports (in metric tonnes)					
United States	228	18	24	54	18
Italy	338	324	352	306	112
Other	1	0	20	34	65
Total	567	342	396	394	195

Sources: Statistics Canada

Table 19

Quebec production of cod by type of product 1984 to 1989

Products	1985	1986	1987	1988	1989
Volume of production (in metric tonnes)					
Fresh					
Eviscerated	2679.0	1321.2	1279.6	808.7	1869.9
Fillets	434.7	521.1	317.5	453.2	317.3
Other	15.1	64.3	100.1	8.7	19.9
Total	3,128.8	1,906.6	1,697.2	1,270.6	2,207.1
Frozen					
Fillets	1541.9	2181.8	1542.6	1095.2	1419.4
Blocks	2802.9	2820.2	2420.0	1622.6	2569.7
Other	2530.8	622.2	773.7	1290.4	3674.2
Total	6,875.6+	5,624.2	4,736.3	4,008.2	7,663.3
Gaspé cured					
Very dry	1175.9	433.8	822.9	556.3	333.0
Dry	1838.3	2636.8	1655.2	2296.0	2286.2
Total	3,014.2	3,070.6	2,478.1	2,852.3	2,619.2
Light salted	5.8	200.4	346.4		
Heavy salted	3276.1	1533.5	1463.5	1295.7	1880.1
Total salted	3,281.9	1,733.9	1,809.9	1,295.7	1,880.1
Other	1.4	1.5	0.4	0.1	5.9
Total other	1.4	1.5	0.4	0.1	5.9
Total	23,177.5	12,336.8	10,721.9	9,426.9	14,375.6

Source: Statistics Division
DFO - Quebec Region

Table 19 (continued)

Quebec production of cod by type of product 1984 to 1989

Products	1985	1986	1987	1988	1989
Value of production (in thousands of dollars)					
Fresh					
Eviscerated	1975.1	1343.1	1707.7	541.2	1163.2
Fillets	1300.6	1798.2	1877.1	1629.8	1342.8
Other	20.2	43.8	99.2	35.4	52.2
Total	3,295.9	3,185.1	3,684.0	2,206.4	2,558.2
Frozen					
Fillets	5086.8	9421.7	8481.2	3875.0	6196.7
Blocks	9305.0	11723.9	13282.7	5759.3	6833.4
Other	3232.0	964.5	2427.1	391.3	1862.1
Total	17,623+8	22,110.1	24,191.0	10,025.6	14,892.2
Gaspé cured					
Very dry	5247.6	2192.6	6021.6	4397.8	2199.9
Dry	7868.4	12053.4	9196.7	11966.9	10188.3
Total	13,116.0	14,246.0	15,218.3	16,364.7	12,388.2
Light salted	14.5	887.7	1407.8		
Heavy salted	6907.1	3649.3	5361.2	3558.5	5150.3
Total salted	6,921.6	4,537.0	6,769.0	3,558.5	5,150.3
Other	18.2	18.6	3.9	1.6	37.3
Total other	18.2	18.6	3.9	1.6	37.3
Total	40,975.5	44,096.8	49,866.2	32,156.8	35,026.2

Source: Statistics Division
DFO - Quebec Region

Table 20

Gross margin of Quebec plants related to processing of cod products 1984 to 1990

(in Can $/Kg)

Product/Year	Sale price of product	Cost of raw material	Gross margin
Cod fillet (5 lb/1-3 cnt)			
1984	3.51	1.25	2.26
1985	3.79	1.41	2.38
1986	5.10	1.60	3.50
1987	6.21	2.40	3.81
1988	4.19	1.89	2.30
1989	4.37	1.82	2.55
1990	5.37	1.86	3.51
Cod block			
1984	2.97	1.25	1.72
1985	3.33	1.41	1.92
1986	4.33	1.60	2.73
1987	5.47	2.40	3.07
1988	4.38	1.89	2.49
1989	4.07	1.82	2.25
1990	5.11	1.86	3.25
Light salted cod (moisture content of 43% or less)			
1984	4.13	1.74	2.39
1985	4.54	2.08	2.46
1986	5.67	2.26	3.41
1987	8.72	3.35	5.37
1988	8.72	3.41	5.31
1989	8.21	3.47	4.74
1990	7.51	3.50	4.01
Light salted cod (moisture content of more than 43%)			
1984	4.06	2.10	1.96
1985	4.51	2.45	2.06
1986	4.82	2.70	2.12
1987	5.93	3.89	2.04
1988	4.93	3.55	1.38
1989	4.96	2.78	2.18
1990	7.22	2.84	4.38

Sources: Boston Blue Sheet
DFO - Statistics Division, Quebec Region
DFO - Economic Services Division, Quebec Region

Table 21

Price at landing in Quebec by groundfish fishing fleet, by species

(in $ per Kg, round weight)

Species/Year	Trawlers	Scottish seiners	Longliners		
			< 35'	35' to 50'	50'+
Cod					
1984	0.40	-	0.37	0.43	0.43
1985	0.43	0.36	0.40	0.50	0.52
1986	0.48	0.67	0.53	0.55	0.57
1987	0.71	0.81	0.83	0.79	0.84
1988	0.49	0.44	0.56	0.70	0.81
1989	0.50	0.47	0.60	0.74	0.87
1990	0.52	0.54	0.74	0.72	0.87
American plaice					
1984	0.34		0.36	0.38	0.33
1985	0.41	0.40	0.39	0.40	0.37
1986	0.55	0.72	0.51	0.60	0.52
1987	0.75	1.12	0.68	0.86	0.71
1988	0.64	0.76	0.74	0.72	0.72
1989	0.71	0.77	0.76	0.77	0.77
1990	0.57	0.77	0.74	0.69	0.64
Turbot					
1984	0.48	-	0.62	0.61	0.62
1985	0.56	-	0.64	0.66	0.55
1986	0.72	-	0.82	0.82	0.82
1987	1.23	-	1.29	1.34	1.28
1988	0.52	-	0.72	0.73	0.69
1989	0.83	-	0.99	1.01	0.96
1990	1.13	-	1.20	1.24	1.20

Sources: DFO - Statistics Division, Quebec Region

Table 22

Landings by Quebec groundfish fishing fleets with fixed gear 1984 to 1989

(in thousands of tonnes)

Species	1984	1985	1986	1987	1988	1989
Cod						
4RS-3Pn	14.02	12.48	7.49	5.51	5.19	4.74
4T	8.34	7.03	6.27	6.82	5.48	3.80
Redfish 4RST	0.08	0.05	0.08	0.36	0.26	0.28
American plaice 4T	0.56	0.57	0.53	0.83	0.81	0.39
Witch flounder 4 RS	0.00	0.00	0.00	0.00	0.00	0.00
Greenland Halibut 4RST	1.03	1.47	5.00	8.47	5.72	3.96
Total	24.03	21.60	19.37	21.99	17.46	13.17

Source: DFO - Annual quota reports

Table 23

Landings by Quebec groundfish fishing fleets of less than 100 feet, with mobile gear 1984 to 1989

(in thousands of tonnes)

Species	1984	1985	1986	1987	1988	1989
Cod						
4RS-3Pn	7.30	5.76	7.50	7.45	3.59	4.75
4T	7.93	16.46	12.36	10.86	12.07	11.63
Redfish 4RST	1.90	0.85	1.11	2.05	1.16	2.26
American plaice 4T	0.99	1.75	2.00	2.45	1.73	1.31
Witch flounder 4RS	0.02	0.03	0.02	0.03	0.03	0.10
Greenland Halibut 4RST	0.48	0.56	1.22	2.23	1.32	0.67
Total	18.62	25.41	24.21	25.07	19.90	20.72

Source: DFO - Annual quota reports

Table 24

Average cash flow[1] income
Quebec groundfish fishing fleet
1986 to 1990

(in dollars)

Fleets	1986	1987	1988	1989	1990
Fixed gear fleet					
Longliners					
less than 35 feet	1,227	4,862	2,965	-1,025	-2,700
35 to 50 feet	6,021	25,583	681	-2,870	-9,900
50 feet and more	19,230	42,892	25,652	17,185	3,500
Mobile gear fleets					
Trawlers					
less than 45 feet				-5,100	-3,600
45 to 65 feet	66,056	113,424	8,703		
50 to 65 feet				23,330	22,800
Scottish seiners	34,330	133,792	11,931	23,860	40,100

1/ The cash flow income represents the pre-tax salary of the skipper-owner of the fishing enterprise.

Source: DFO - Economic Services Division, Quebec Region
Costs and revenues of fishing enterprises for 1986 and 1989;
Economic performance of fishing fleets for 1987 and 1988, with adjustment as of end of August 1990;
Projections for 1990.

DIVISION DES SERVICES ECONOMIQUES

ECONOMIC SERVICES DIVISION

Ministère des Pêches et des Océans - Région du Québec
Department of Fisheries and oceans - Quebec Region

(JUIN 1991)

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